(19) (11) Publication number: **2003**

Generated Document.

PATENT ABSTRACTS OF JAPAN

(21) Application number: **2002383051**

(51) Intl. Cl.: **H01M 4/02** H01M 4/48 H01M 4/60 H01M 4/62 H01M 4/74

(22) Application date: **05.12.02**

(30) Priority: **05.12.01 US 2001 336604**

(43) Date of application publication: **29.08.03**

(84) Designated contracting states:

(71) Applicant: **WILSON GREATBATC TECHNOLOGIES INC**

(72) Inventor: **RUBINO ROBERT S**
GAN HONG
TAKEUCHI ESTHER S

(74) Representative:

(54) TWO SHEETS OF POSITIVE ELECTRODE COLLECTORS FOR ALKALINE METAL ION ELECTROCHEMICAL BATTERY

(57) Abstract:

PROBLEM TO BE SOLVED: To incorporate a substitution cathode active material in a rechargeable battery without sacrificing conductivity of the electrolyte, cycling efficiency and safety.

SOLUTION: The new sandwich type positive electrode for a secondary battery includes a 'sacrificial' alkaline metal 16 as well as a cathode active material 12A. In the case of vanadium oxide silver, the desirable sacrificial alkaline metal is lithium. When the battery is activated, lithium metal is automatically intercalated in the vanadium oxide silver. In this way, the sacrificial lithium is

consumed and the vanadium oxide silver is in principle lithiated. This means that the cathode active material such as vanadium oxide silver that is in the past generally used only for a primary battery can be also useful for a secondary battery from now on. In several usages, vanadium oxide silver is preferable to the lithiated cathode active material that is generally used.